DEC 1 9 2019

DECISION DOCUMENT FOR THE APPROVAL OF MICHIGAN'S 2018 CLEAN WATER ACT SECTION 303(d) LIST (CATEGORY 5)

The U.S. Environmental Protection Agency (EPA) has conducted a complete review of Michigan's 2018 Section 303(d) list and supporting documentation and information, that Michigan submitted to EPA through the Assessment, Total Maximum Daily Load Tracking and Implementation System (ATTAINS) database on November 25, 2019. Based on this review, EPA has determined that Michigan's list of water quality limited segments (WQLS) still requiring total maximum daily loads (TMDLs) meets the requirements of Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations. Therefore, EPA hereby approves Michigan's 2018 303(d) list. The statutory and regulatory requirements, and EPA's review of Minnesota's compliance with each requirement, are described in detail below.

I. Statutory and Regulatory Background

A. Identification of Waters for Inclusion on Section 303(d) List

Section 303(d) (1) of the CWA directs states to identify those waters within their respective jurisdictions for which effluent limitations required by Section 301(b)(1)(A) and (B) of the Act are not protective enough to implement any applicable water quality standards, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirement applies to waters impaired by point and/or non-point sources, pursuant to EPA's long-standing interpretation of Section 303(d).

EPA regulations provide that states do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the Act; (2) more protective effluent limitations required by state or local authority; and (3) other pollution control requirements of state, local, or federal authority.[1]

B. Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing Section 303(d) lists, states are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of water: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the State's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive models indicate non-attainment of applicable standards; (3) waters for which quality problems have been reported by government agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in a non-point source assessment submitted to EPA under Section 319 of the Act.[2] In addition to these minimum

[1] 40 C.F.R. §130.7(b)(1).
[2] 40 C.F.R. §130.7(b)(5).

categories, states are required to consider any other data and information that is existing and readily available. EPA's 1991 Guidance for Water Quality-Based Decisions describes categories of water quality-related data and information that may exist and be readily available.[3] While states are required to evaluate all existing and readily available water quality-related data and information, states may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring states to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations require states to include as part of their submissions to EPA documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; (3) a rationale for not using existing and readily available data and information; and (4) any other reasonable information required by the Region.[4]

C. Priority Ranking

EPA regulations also codify and interpret the requirement in Section 303(d)(1)(A) of the Act that states establish a priority ranking for listed waters. The regulations require states to prioritize WQLSs on their Section 303(d) lists for TMDL development, and to identify those WQLS targeted for TMDL development in the next two years.[5] In prioritizing and targeting waters, states must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. As long as these factors are taken into account, the Act provides that states establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic and aesthetic importance of particular waters, degree of public interest and support, and state or national policies and priorities.[6]

II Analysis of The State's Submittal

On November 25th, 2019 the Michigan Department of Environment, Great Lakes, and Energy (EGLE), submitted its 2018 Integrated Report (2018 IR)[7] and cover letter, through the ATTAINS system which included, for purposes of the State's 2018 303(d) List submittal the following sections, which are collectively referenced as the Michigan 2018 303(d) List, or "2018 Submittal":

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[3] U.S. EPA, Office of Water, *Guidance for Water Quality-Based Decisions: The TMDL Process*, Appendix C (1991) (1991 Guidance). *See also* U.S. EPA, Office of Water *Guidance for 2008 Assessment Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* (2008).

[4] 40 C.F.R. § 130.7(b)(6).

[5] 40 C.F.R. § 130.7(b)(4).

[6] *See* 57 *Fed. Reg.* 334040, 33045 (July 24, 1992); *see also* 1991 Guidance.

[7] EPA notes that MI EGLE submitted its IR both through ATTAINS and as an attachment to an email message. EPA found errors in the IR file submitted via email, which MI EGLE corrected in ATTAINS. Therefore, EPA is today approving only that portion of MI EGLE's IR information relevant to our CWA 303(d) review and that the State submitted through ATTAINS.

Table 1. Section 303(d) portion of Michigan 2018 IR Comprising of the 2018 303(d) List

Section	Description
Chapter 3 of the IR	Assessment Methodology
Section 8.3.3 of the IR	Michigan's 2016-2022 Prioritization Framework for the Long-Term Vision for Assessment, Restoration, and Protection Under the Clean Water Act Section 303(d) Program
Chapter 9 of the IR	Public Participation, including a summary of comments received and the State's responses.
Appendix E	Public Comments received by the State on the IR

Michigan divided its assessed waters into five categories as recommended by EPA's 2006 guidance.[8] EPA is taking action on the impaired waterbody segments identified within the ATTAINS database as Category 5 waters for which available data and/or information indicate that at least one designated use is not being supported or is threatened, and for which a TMDL is needed. After a full review and consideration of the information presented by the State in its 2018 submittal, EPA is approving the waters identified by Michigan at the time of its final submittal as Category 5 waters in the ATTAINS database as Michigan's list of impaired waters needing TMDLs (also attached to this Decision Document as Appendix 1). Although the information was considered in EPA's review, EPA is not taking any action to approve or disapprove waters identified by Michigan within ATTAINS in categories 2, 3, and 4. Additionally, EPA is not taking action to approve or disapprove waters identified in Appendices A1, A2, B, C, D1, D2 to the Michigan IR in today's decision.

A. Description of the Methodology Used to Identify Waters

EPA's regulations at 40 C.F.R. § 130.7(b)(6) require, among other things, that states provide documentation to support their decisions to list or not list waters including a description of the methodology used to develop the list. Michigan's 2018 Submittal contains the State's current assessment methodology.

Michigan has not adopted its assessment methodology into the State's approved water quality standards. EPA guidance provides that:

> For methodologies that are not part of the state's applicable water quality standards, EPA will consider the methodology as it assesses whether the state conducted an adequate review of all existing and readily available water quality-related information, whether the factors that were used to make listing and removal decisions were reasonable, whether the process for evaluating different kinds of water-quality related data and information is sufficient, and whether the process for resolving jurisdictional disagreements is sufficient. If EPA finds that the state's methodology is inconsistent with its water quality standards, and its application has resulted in an improper Section 303(d) list, EPA may disapprove

[8] U.S. EPA, Office of Water, *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to §§ 303(d), 305(b) and 314 of the Clean Water Act,* pp. 29-30 (July 29, 2005) (2006 IR Guidance).

the list. Regardless of the suitability of the methodology, EPA must review the list for consistency with the relevant provisions of the CWA and the regulations.[9]

In determining the status of Michigan's waters, EGLE begins with the designated use(s) for each water. EGLE generally evaluates available data for each parameter independently to determine support for the designated use. Waters will be listed as impaired if any one of the data types indicate that the water is not supporting its designated use. Some particular data types or situations may require consideration of multiple data types in combination. If no data are available for any assessment method, then a water body is considered not assessed. The consideration of a parameter with respect to a particular designated use in the assessment methodology does not preclude the use of that parameter to make a determination that a different designated use is supported.

Section 3.2 of the Assessment Methodology describes the types of data and information that Michigan uses to determine if a designated use is supported.

EGLE uses monitoring data related to fish tissue, water chemistry, sediment chemistry, biological integrity, physical habitat, wildlife contaminants, and stream flow. EGLE also uses data from beach monitoring and inland lake monitoring to make assessment determinations. In determining the waters to be listed in Category 5 of the 2018 IR, EGLE reviewed the 2016 Integrated Report (used as a baseline); fish consumption advisories, dilution calculations, trend analyses, predictive models for determining the physical, chemical, or biological integrity of surface waters; reports of fish kills and chemical spills, public water supply taste and oder complaints, surface water quality monitoring data submitted by external parties and agencies; and other information.[10]

Table 2 summarizes the process EGLE identified in Chapter 3 of the Michigan 2018 IR for its determination of impaired waters and associated designated uses, assessment types, and parameters.

Table 2: How Michigan applies Data for Developing Category 5 List

Designated Use (DU) and Relevant IR Section	**Assessment Type**	**Parameter(s) Assessed**	**Assessment Method**
Agriculture Section 3.4	No specific type	No specific indicator	EGLE does not use a specific assessment method to evaluate support of this designated use. Information regarding the support of this use is evaluated on a case-by-case basis

[9] 2006 IR Guidance, pp. 29-30.
[10] MI 2018 IR, Section 3.2.

			using best professional judgment (BPJ).
Navigation Section 3.4	No specific type	No specific indicator	EGLE does not use a specific assessment method to evaluate support of this designated use. Information regarding the support of this use is evaluated on a case-by-case basis using BPJ.
Industrial Section 3.4	No specific type	No specific indicator	EGLE does not use a specific assessment method to evaluate support of this designated use. Information regarding the support of this use is evaluated on a case-by-case basis using BPJ.
Warmwater Fishery and Coldwater Fishery Section 3.5	Physical / Chemical (i.e., water chemistry data and supporting land data such as habitat)	Dissolved Oxygen (DO)	Ambient DO data are compared to the standard, per Mich. Admin. Code R 323.1064 and R 323.1065[11] to determine designated use support. Waters not meeting the DO standard are generally listed in Category 5. The number of instantaneous DO samples needed to make a support determination is evaluated on a case-by-case basis using BPJ. Continuous data collected over a long period of time (e.g., two weeks) are preferred over periodic single samples.
Warmwater Fishery and Coldwater Fishery Section 3.5	Physical / Chemical	Temperature	Ambient temperature data are compared to the standard (per Mich. Admin. Code R 323.1069, R 323.1070, R 323.1072, R 323.1073, and R 323.1075, depending on the waterbody type) to determine designated use support. Waters not meeting the temperature standard are generally listed in Category 5. The number of temperature samples needed to make a support

[11] http://dmbinternet.state.mi.us/DMB/ORRDocs/AdminCode/302_10280_AdminCode.pdf.

			determination is evaluated on a case-by-case basis using BPJ.
Warmwater Fishery and Coldwater Fishery Section 3.5	Physical/ Chemical	Ammonia (un-ionized) Concentration	EGLE compares the calculated un-ionized ammonia values to the standard (per Mich. Admin. Code R 323.1057) to determine designated use support. Waters not meeting the un-ionized ammonia standard are generally listed in Category 5. *In general, a decision of "not supporting" for un-ionized ammonia will be based on more than one exceedance of the monthly average (chronic) WQS per R 323.1057 over the period of review (typically two years, see 3.2) following USEPA guidance (USEPA, 1999). Support determinations of daily maximum (acute) conditions using un-ionized ammonia data will be based on following USEPA guidance; when comparing ambient water column data to Aquatic Maximum Values, more than one exceedance of the acute un-ionized ammonia WQS over the period of review will typically result in assessing the site as not supporting (USEPA, 1999).* *[Excerpted from the MI 2018 Assessment Methodology]* The number of total ammonia samples needed to make a support determination is also evaluated on a case-by-case basis using BPJ.

Warmwater Fishery and Coldwater Fishery Section 3.5	Physical / Chemical	pH	Ambient pH samples are compared to the standard, Mich. Admin. Code R 323.1053, to determine designated use support. Waters not meeting the pH standard are generally listed in Category 5. In general, a decision of "not supporting" for pH will be based on a 10 percent exceedance threshold following EPA guidance (EPA, 2002). If more than 10 percent of representative samples (with continuous monitoring being the preferred method) exceed the criteria set forth in Mich. Admin. Code R 323.1053, the site is listed as "not supporting." The number of pH measurements needed to make a support determination is evaluated on a case-by-case basis using BPJ.
Warmwater Fishery and Coldwater Fishery Section 3.5	Physical / Chemical	Toxics	Warmwater and coldwater fishery designated use support determinations related to non-Bioaccumulative Chemicals of Concern (BCC) are made by comparing ambient water column chemical concentrations to Aquatic Maximum Values and Final Chronic Values per Mich. Admin. Code R 323.1057 using Figures 3.1a and following the process described in 3.6.1.1.
Warmwater Fishery and Coldwater Fishery Section 3.5	Biological	Fish Community	Michigan Procedure 51 (P-51) is generally used to determine support for the warmwater and coldwater fishery uses. P-51 includes a habitat assessment, a macroinvertebrate assessment, and a fish assessment. The State uses P-51 to rate wadeable streams and rivers for warmwater fisheries. A rating of "poor" is used when the biological community (in this instance, the fish community) is below the expected level for a stream

			or river segment, and the water is placed in either Category 5 (not supporting) or Category 3 (insufficient information). Waters are placed in Category 5 for the warmwater fishery if: a "poor" rating is assigned using P-51, fewer than 50 fish are collected, or if the relative abundance of fish with anomalies exceeds 2%. Waters are placed in Category 5 for the coldwater fishery if: "coldwater fish communities with salmanoid relative abundance of less than 1%, or if fewer than 50 fish are collected or if the relative abundance of fish with anomalies exceeds 2% (applies to both warmwater and coldwater fishers) depending on the quality and amount of supporting contextual information available." A waterbody with a "poor" rating would be placed in Category 3 if EGLE determines that the data used in P-51 are not representative. For example, a waterbody with a temporarily poor fish community due to a short-term chemical spill may be listed in Category 3 if remediation occurred and the community was expected to recover. One bioassessment result is generally sufficient to make a support determination using P-51. Sites are selected using targeted study designs. Fish community data for wadeable streams and rivers collected using methods other than P-51 are evaluated on a case-by-case basis using BPJ. The MI 2018 IR also states that "Additional factors considered in determining support of the fishery designated uses are the presence of indicator species such as cisco in coldwater lakes or walleye in warmwater lakes at densities sufficient to indicate waterbody support of a

			healthy food web that could maintain taxa of such trophic levels."
Other Indigenous Aquatic life and Wildlife Section 3.6	Physical / Chemical	Toxics	Ambient water column data are compared to Wildlife, Aquatic Maximum, and Final Chronic Values. Figure 3.1a and b provide a decision-making flow chart. Both target and probabilistic study designs are used to select water chemistry monitoring sites. Quality assured data from the most recent seven years is used with the intent to capture two probabilistic monitoring events 5 years apart.

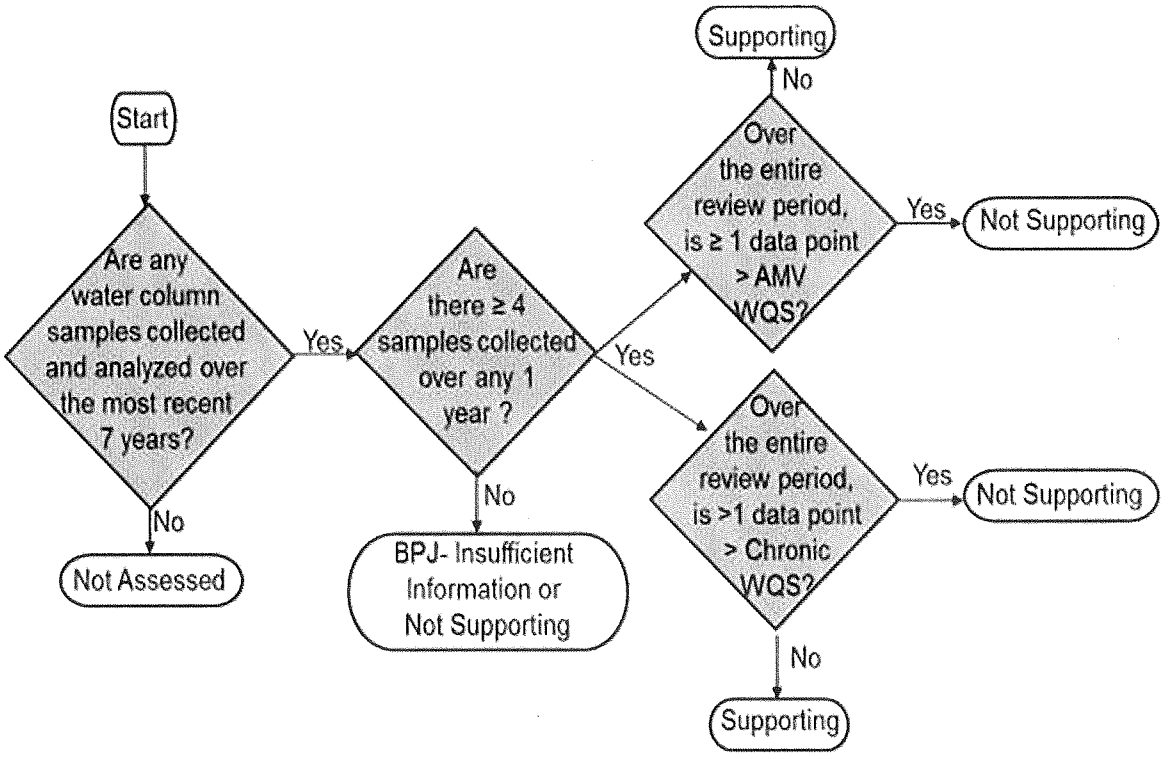


Figure 3.1a. Determination of other indigenous aquatic life and wildlife and warmwater/coldwater fishery designated uses support using water column toxic substance concentration for non-BCCs.
(Excerpted from the MI 2018 Assessment Methodology)

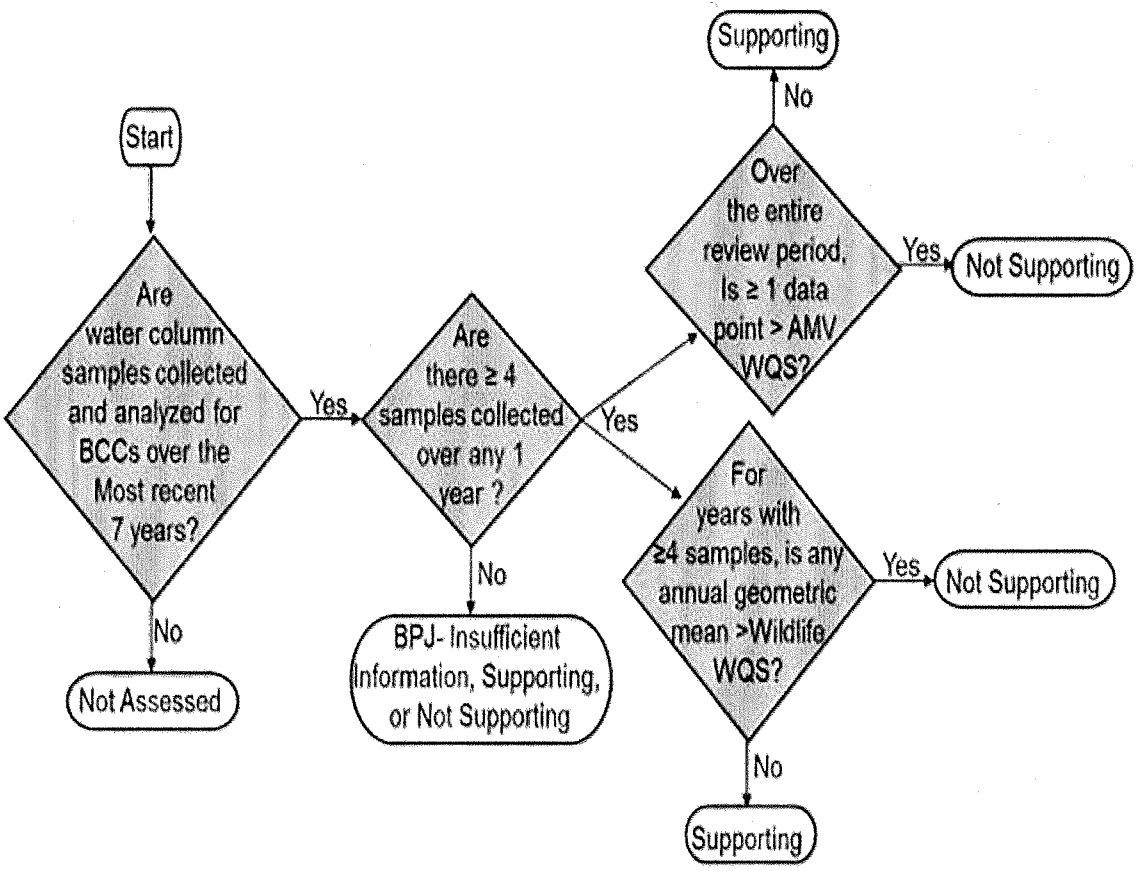


Figure 3.1b. Determination of other indigenous aquatic life and wildlife designated use support using water column toxic substance concentration for BCCs.
(Excerpted from the MI 2018 Assessment Methodology)

Other Indigenous Aquatic life and Wildlife Section 3.6	Physical / Chemical	Nutrients	Ambient nutrient data (*i.e.,* nitrogen and phosphorus) are used along with biological indicators to determine attainment of the designated use using BPJ. Nutrient samples collected between July and September (when the environmental effects of nutrients are most likely to occur) are especially important for determining use attainment. If nutrient concerns indicate potential effects on dissolved oxygen, additional studies may be conducted to link nutrient impacts to effects on

			warmwater and coldwater fisheries designated uses. Data collected from non-typical sources and methods is considered on a case by case basis using BPJ. For inland lakes, Michigan uses the Carlson Trophic Status Index (TSI) along with macrophyte surveys to determine attainment. "Individual TSI values are calculated using late summer data for each trophic state indicator: summer secchi depth (transparency), total phosphorus concentration (epilimnetic) and chlorophyll *a* concentration (photic zone)." A final TSI score is determined by averaging individual (indicator) TSI values, used to determine the trophic status of the lake. "Inland lakes classified as oligotrophic, mesotrophic or eutrophic are generally determined to support the other indigenous aquatic life and wildlife designated use, unless other information exists regarding designated use impacts resulting from excess nutrients (e.g., persistent and significant algal blooms)." Values over 61 are considered "hypereutrophic" and are listed as not supporting or insufficient information, based on contextual information.
Other Indigenous Aquatic life and Wildlife Section 3.6	Physical / Chemical	Ammonia (un-ionized) Concentration	Support determinations of chronic and acute conditions using un-ionized ammonia data to assess the other indigenous aquatic life and wildlife designated use follow the processes in Section 3.5 for water and coldwater fisheries described above.

Other Indigenous Aquatic life and Wildlife Section 3.6	Physical / Chemical	pH	Support determinations using pH data to assess the other indigenous aquatic life and wildlife designated use will follow the process found in Section 3.5 for water and cold water fisheries described above.
Other Indigenous Aquatic life and Wildlife Section 3.6	Physical / Chemical	Physical Characteristics	The State does not have specific assessment methods or numeric standards for turbidity, color, oil, films, floating solids, foams, settle-able solids, suspended solids, and deposits. Michigan uses BPJ, along with other assessment types (*i.e.,* biological indicators), to determine attainment of the designated use as set out in the narrative standard, Mich. Admin. Code R 323.1050.
Other Indigenous Aquatic life and Wildlife Section 3.6	Biological	Macro-invertebrate Community	In addition to physical and chemical data, EGLE generally uses P-51 to determine support for the "Other Indigenous Aquatic life and Wildlife" uses. P-51 includes a habitat assessment, a macroinvertebrate assessment, and a fish assessment. The State developed methods in P-51 to determine the rating of wadeable streams and rivers for the macroinvertebrate community. For nonwadeable rivers, Michigan developed methods in *The State's Qualitative Biological and Habitat Survey for Protocols for Nonwadeable Rivers* (the "Nonwadeable Procedure") to evaluate the macroinvertebrate community. Sites are selected using both targeted and probabilistic study designs. One bioassessment result is generally sufficient to make a support determination. A rating of "poor" for both P-51 and the Nonwadeable Procedure is used when the

			macroinvertebrate community is below the expected level for the waterbody, and the waterbody is placed in either Category 5 (not supporting) or Category 3 (insufficient information). Macroinvertebrate community data for wadeable streams and rivers collected using methods other than P-51 are evaluated "on a case-by-case basis using BPJ." Where P-51 is not appropriate (*e.g.,* wetlands, lakes, etc.) biological integrity is evaluated on a case-by-case basis.
Other Indigenous Aquatic life and Wildlife Section 3.6	Biological	Bacteria, Algae, Macrophytes, and Fungi	EGLE uses site-specific visual observation of bacteria, algae, macrophytes, and fungi to determine attainment of the designated use. In addition, water column nutrient data (*i.e.,* nitrogen and phosphorus) may be used to make an attainment decision (*see* nutrient assessment method above). EGLE uses BPJ to determine whether excessive nuisance conditions exist, using P51 to guide the assessment. P51 offers the following guidance to make these determinations: 1) Cladophora and/or Rhizoclonium is > than 10 inches long covering > 25% of a riffle; 2) Rooted macrophytes are present at densities that impair the designated uses of the waterbody; and 3) Bacterial slimes are present.
Other Indigenous Aquatic life and Wildlife Section 3.6	Biological	Sediment Toxicity	Support determinations for the designated use of other indigenous aquatic life and wildlife are based on sediment toxicity studies (using EPA test methods 100.1, 100.2, or similar methods) on freshwater invertebrates along with sediment chemistry data and site-specific information. Figure

			3.2 provides a decision-making framework for incorporating toxicology results, sediment chemistry data, and site information to make a use support determination.

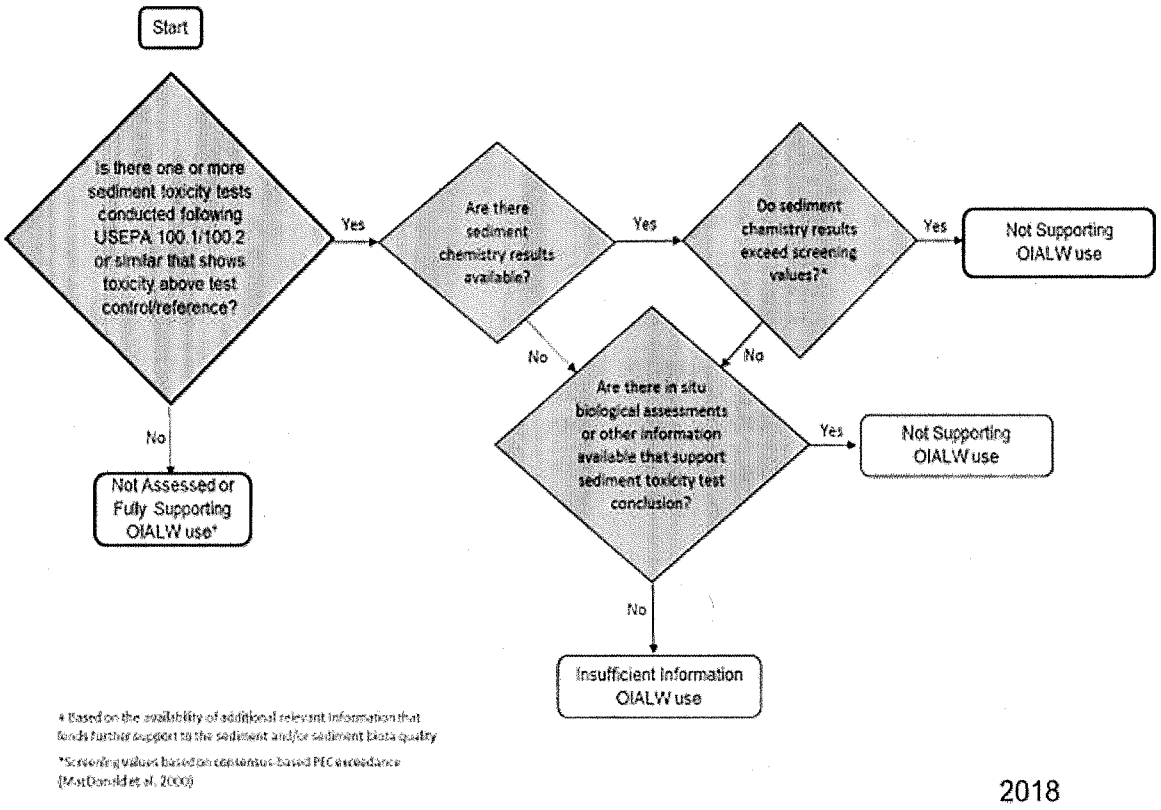


Figure 3.2. Determination of other indigenous aquatic life and wildlife designated use support using sediment toxicity.
(Excerpted from the MI 2018 Assessment Methodology)

Partial and Total Body Contact Recreation Section 3.7	Pathogen Indicators	*E. coli*	The partial body contact (PBC) use is applicable to all the State waters year-round, while the total body contact (TBC) use is applicable only May 1st – October 31st. Ambient *E. coli* data are compared to their respective numeric standards, Mich. Admin. Code R 323.1062 and R323.1100, to determine attainment of each designated use.

			The State uses the presence of raw/untreated sewage and *E. coli* sampling data to assesses attainment. The State determines nonattainment of the recreational use(s) if: 1) *E. coli* concentrations exceed the geometric mean WQS of 130 *E. coli*/100 milliliters (mL) based on weekly samples collected over the 16-week total body contact recreational period; 2) ten percent of the samples exceed the daily maximum WQS of 300 *E. coli*/100 mL based on weekly samples over the 16-week total body contact recreational period; 3) two or more of the samples collected during May 1st – October 31st exceed the 1,000 *E. coli*/100 mL; or 4) untreated combined sewer overflows or untreated sewage is present in the waterbody. Any deviation from the discussed assessment method is evaluated by EGLE using BPJ. Figures 3.3a and 3.3b provide decision flow diagrams for assessment of partial and total body contact designated use support respectively.

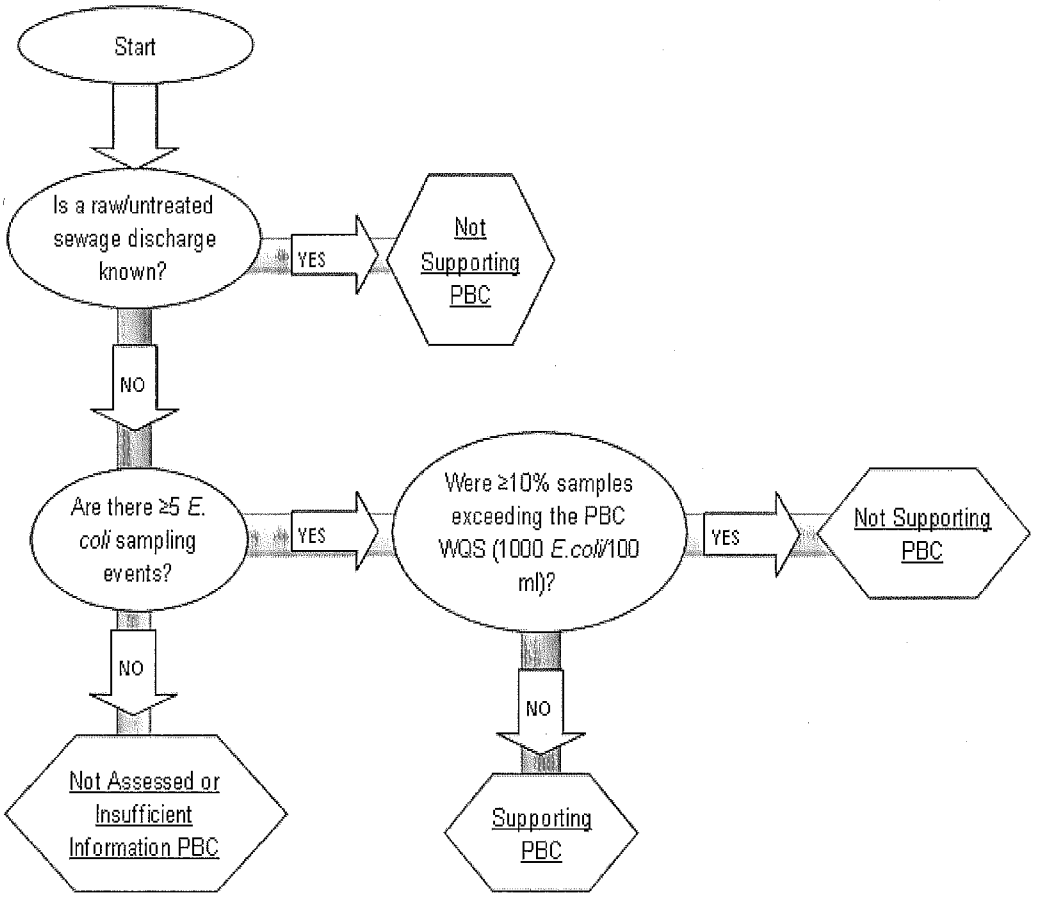


Figure 3.3a. Determination of partial body contact designated use support using ambient *E. coli* water column concentration. See Section 3.7.1.1 for additional details.
(Excerpted from the MI 2018 Assessment Methodology)

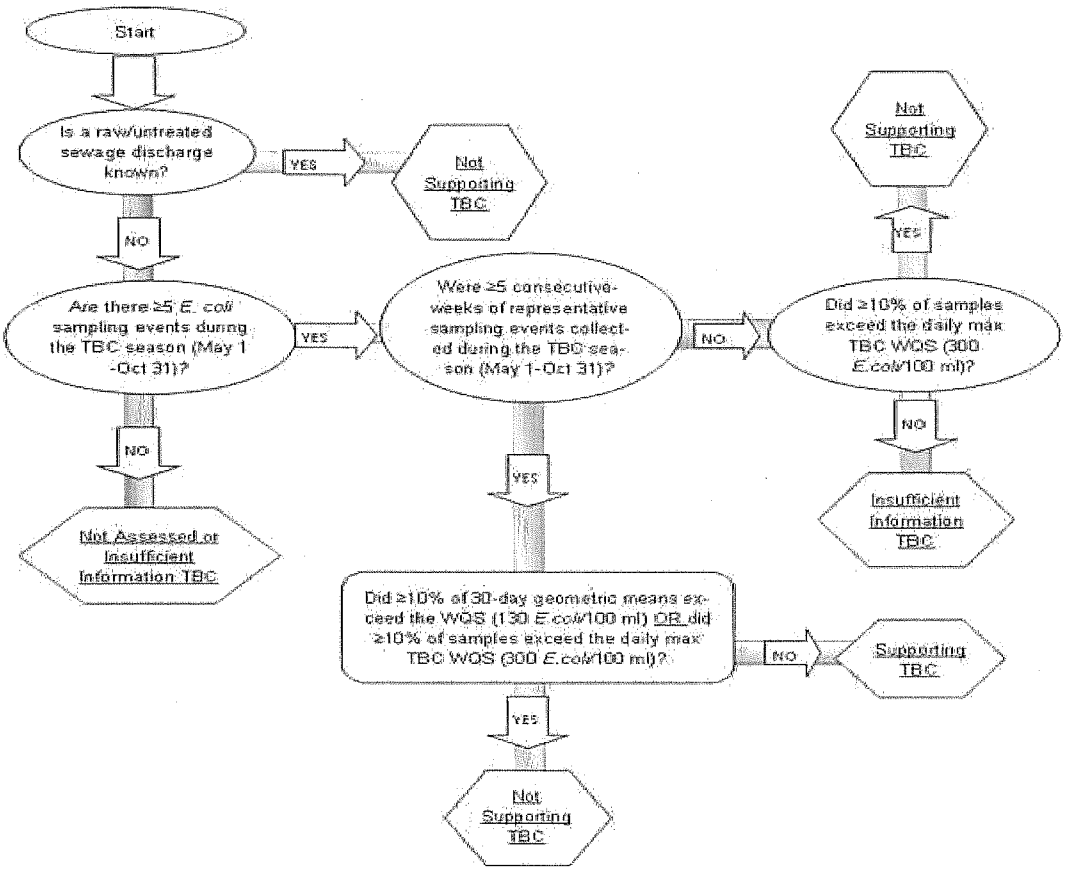
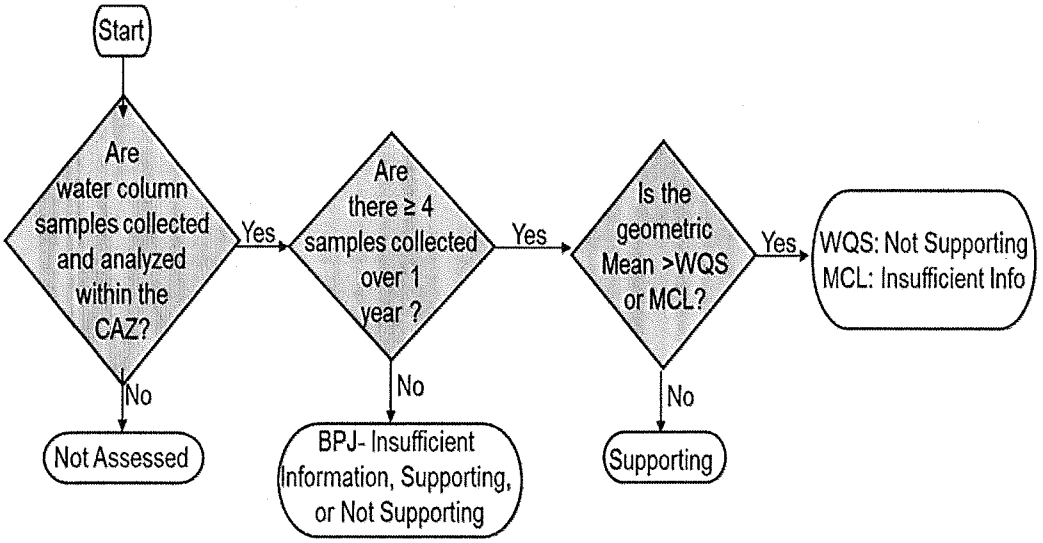


Figure 3.3b. Determination of total body contact designated use support using ambient *E. coli* water column concentration.
(Excerpted from the MI 2018 Assessment Methodology)

Partial and Total Body Contact Recreation Section 3.7	Physical / Chemical	pH	"A determination of not supporting may be made in situations where the pH of surface water is such that direct human contact presents an opportunity for physical danger."
Fish Consumption Section 3.8	Physical / Chemical	Mercury	The State uses site-specific water column mercury data and mercury fish tissue data together to make a designated use support. Water column samples are required to be collected and analyzed using USEPA methods 1669 and 1631 respectively. Ambient water column mercury data are compared to the human non-cancer

			standard of 1.8 ng/L (based on the geometric mean of four or more samples collected over at least 1 year) and fish tissue mercury is compared to the trigger value of 0.35 mg/kg to make an attainment determination. A water body is considered to not support the fish consumption designated use if either the Michigan Department of Health and Human Services (MDHHS) has issued a site-specific fish consumption advisory for that water body or ambient water column concentrations exceed WQS, as described below. "The presence of MDHHS fish consumption advisories of two meals per month, or more restrictive, are used as a basis for a not supporting assessment."
Fish Consumption Section 3.8	Physical / Chemical	PCBs	Michigan compares the ambient water column PCB data to the State's non-drinking water human cancer value (HCV) of 0.026 ng/L (Mich. Admin. Code R 323.1057). Waterbodies with one or more ambient water column PCB samples results greater than the Human Cancer Value (HCV) are determined to not support the fish consumption designated use.
Fish Consumption Section 3.8	Physical / Chemical	Bio-accumulative chemicals of concern (BCCs) (not including mercury and PCBs)	"To determine fish consumption designated use support for BCCs other than mercury and PCBs in the water column, ambient water column chemical concentrations are compared to the Human Noncancer Value (HNV) and HCV for nondrinking water per R 323.1057 using Figure 3.1b (see Section 3.6.1.1)."
Fish Consumption	Other Public Health Indicators	Fish Consumption	"The presence of MDHHS fish consumption advisories of two meals per month, or more restrictive, are

Section 3.8		Advisories for Mercury	used as a basis for a not supporting assessment." Section 3.8.2.1 of the Assessment Methodology
Fish Consumption Section 3.8	Other Public Health Indicators	Fish consumption advisories (FCAs) for Bioaccumulative Substances other than mercury.	If the Michigan Department of Community Health (MDCH) has issued a site-specific fish consumption advisory on a water body for a contaminant (other than mercury), recommending consumption of 12 or less meals per month, then the water body is determined to be in non-attainment of the fish consumption designated use. According to EGLE, the MDCH bases its advisories on fish tissue data collected as part of the Michigan fish contaminant monitoring program and recommendations from EGLE.
Public Water Supply Section 3.9	Physical / Chemical	Toxics (not including BCCs)	Drinking water human noncancer values and human cancer values water quality standards are used directly when assessing public water supply designated uses for non bioaccumulative compounds (bioaccumulation factor of 1).
Public Water Supply Section 3.9	Physical / Chemical	Toxics (BCCs)	For compounds that have the potential to bioaccumulate (bioaccumulation factor greater than 1) a surrogate screening value is used to assess the public water supply designated use. Maximum permissible concentration levels (MCL) based on the consumption of 2 liters of water per day determined by the MI Drinking Water Program are used to determine whether additional assessment is needed. Assessment determinations are not made directly based on MCL values because these values are intended to apply to drinking water

			after treatment. Data used for assessments should be reflective of conditions within the critical assessment zone for Great Lakes intakes, in the upstream portion of 10-digit HUCs, and waters identified by safe drinking water act staff for inland intakes. The geometric mean of a minimum of four data points is compared to either the WQS or the MCL following the decision-making process in Figure 3.5
 Figure 3.5. Determination of the Public Water Supply designated use support using WQS or MCLs. *(Excerpted from the MI 2018 Assessment Methodology)*			
Public Water Supply Section 3.9	Physical / Chemical	Chlorides	Ambient drinking water intake data or other consistent ambient monitoring data is compared to the WQS. If more than 10% of samples during the period of review exceed the applicable WQS, the designated use is considered impaired. Determinations are made on a case-by-case basis where representative monthly average calculations can be compared to R323.1051(2).

Public Water Supply Section 3.9	Physical / Chemical	Taste and Odor	Site-specific complaints of substances causing taste and odor problems in community source waters are considered on a case-by-case basis using BPJ.
Public Water Supply Section 3.9	Physical / Chemical	Nitrates	A minimum of four data points are utilized to assess designated use attainment in a method similar to that used in Section 3.6.1.1, however, one or more exceedances of the 10 mg/L WQS (also MCL) will result in an assessment of not supporting the public water supply designated use. If an extreme exceedance of the WQS is detected, less than four data points can be used to assess the designated use as not met.
Public Water Supply Section 3.9	Physical / Chemical	Total Microcystins	Assessment decision should be based on monthly microcystins sampling data gathered during the June through September growth season. A determination of Not Supporting the public water supply designated use can be made if the concentration of microcystin exceeds 0.3 ug/l twice, a minimum of 30 days apart, in a 3-year period, and is supported by documented evidence of eutrophication and nuisance nutrient conditions during that period. The presence of microcystins alone will typically result in a determination of Insufficient Information. However, based on best professional judgement, an assessment can be made based on different 'weight of evidence' scenarios.

B. Consideration of Existing and Readily Available Water Quality-Related Data and Information

In preparing its 2018 IR, EGLE evaluated water quality data collected by its Water Quality Monitoring Program, fish consumption advisories by the MDHHS, reports of fish kills and chemical spills and public water supply taste and oder complaints; performed dilution calculations trend analyses, and/or predictive models for determining the physical, chemical and/or biological integrity of surface waterbodies; used Michigan's 2016 IR as a baseline for the 2018 IR; evaluated surface water quality monitoring data submitted from members of the public and government agencies following public solicitation; and other information. Michigan considered all data, information, and public comments received during the public comment period. Comment summaries and the State's responses are included in Section 9 of the IR, and the original comments received are compiled in Appendix E of the IR.

EPA has determined that Michigan took reasonable steps to assemble all existing and readily available water quality-related data and information as required by 40 CFR 130.7, including data and information from members of the public and government agencies.

Internal Data

For purposes of the development of its 2018 IR, the State established a cut-off date of December 31, 2016 for internal water quality data (*i.e.*, data collected by EGLE and its grantees and contractors). Accordingly, internal data collected between January 1, 2015 and December 31, 2016 were considered during the development of the 2018 IR. Additionally, data collected *before* January 1, 2015 that were not used for the 2016 listing cycle were considered for the 2018 IR using the 2018 IR methodology. EGLE used a seven-year span of data collected through its Water Chemistry Monitoring Project (WCMP) for this IR. WCMP data collected in 2016 were not quality-checked in time to be used for this IR, but instead will be considered for the 2020 cycle.

External Data

The December 31, 2016, cut-off date did not apply to water quality data submitted to EGLE by other parties. EGLE released a solicitation announcement for outside entities to submit data on EGLE's web-based calendar.

> *This request was published on the EGLE's calendar on March 6, March 20, April 3, and April 17, 2017, and e-mailed to key individuals in the MDNR's Fisheries Division, MDARD-Right to Farm, United States Forest Service, USFWS, University of Michigan, Alliance for the Great Lakes, and the USEPA. Additionally, an e-mail was sent via EGLE list-serve to over 1,600 members with specific interest in the Integrated Report and TMDL programs. Data were received from the following organizations: MDNR, Little River Band of Ottawa Indians, City of Rochester Hills, National Park Service, Three Lakes Association, The Watershed Center Grand Traverse Bay, Gogebic-Iron Wastewater, and Macomb County, Environmental Health Services Division. Table 9.1 summarizes whether these outside data were used, if so, how, and, if not, why.*

Table 9.1 Summary of outside data received and their use in the 2018 IR.

Organization	Data Used?	How (if Yes or Partial), Why (if No)
City of Rochester Hills	No	A, B; E. coli single samples not usable
DNR Fish Data	Yes	Data reviewed and used to update relevant AUIDs
Gogebic-Iron Wastewater	No	B; Not ambient surface water data
Little River Band of Ottawa Indians	Yes	Data reviewed and used to update relevant AUIDs
Macomb County	No	A; E. coli single samples not usable
National Park Service	Yes	Data reviewed and used to update relevant lake AUIDs
The Watershed Center Grand Traverse Bay	Yes	E. coli data used for assessment decisions
Three Lakes Association	No	A, Data reviewed, not able to be used for assessment but supported existing assessment decisions based on previous monitoring.

A. Data did not meet minimum requirements for sample size and/or duration
B. Data for parameters not currently used as assessment indicators
C. Data retrieval and manipulation problems

Excerpted from the Integrated Report document

Quality Assurance and Quality Control (QA/QC)

The quality assurance/quality control requirements are described in the EGLE's Quality Management Plan. EGLE also requires all grantees or vendors receiving state or federal money for the purpose of conducting water quality monitoring to prepare and follow Quality Assurance Project Plans. If used for assessment purposes, data submitted by outside agencies or the public must satisfy EGLE's QA/QC requirements. Data that does not meet State QA/QC requirements can be used to list a waterbody for further evaluation.

Application of Datasets

Datasets that meet the QA/QC requirements set out by EGLE are evaluated for each waterbody "to determine if the data are representative of existing conditions and of adequate quality to make designated use support decisions. Data may not be representative of existing conditions if land use, point sources, or hydrologic conditions were substantially changed since the point of the last data collection." Additionally, data may not be adequate if EGLE or applicable field or laboratory methods have changed.

When making an impairment determination, EGLE considers the quantity of data, as well as the duration (*i.e.,* period of time the exceedance occurred), frequency (*i.e.,* how often the exceedance occurred), magnitude (*i.e.,* how great the exceedance measures above the WQS), and timing (*i.e.,* when the exceedance occurred relative to the applicable timeframe of the WQS). Analytical method sensitivity and contextual information (such as seasonality) are also considered. It should also be noted that target sample sizes may be used to assess various designated uses, but are not applied as an absolute rule.

EGLE also notes that in general, while data that are collected to determine compliance with permitted activities (such as NPDES discharge data) are not used to determine designated use support, ambient data collected for this purpose may be considered.

C. Listing of Waters Impaired by Non-point Sources

Section 303(d) lists are to include all WQLSs still needing TMDLs, regardless of whether the source of the impairment is a point and/or non-point source. U.S. EPA's long-standing interpretation is that Section 303(d) applies to waters impacted by point and/or non-point sources.[12]

After complete and full review of EGLE's 2018 submittal, U.S. EPA concurs that the State properly listed waters with non-point sources that are causing or expected to cause impairment, consistent with Section 303(d) and U.S. EPA guidance.

D. Removal of Waters and Impairments from the 2016 303(d) List

A state can remove a waterbody from the 303(d) list for good cause. The regulation at 40 C.F.R. § 130.7(b)(6)(iv) provides that good cause includes, but is not limited to, the availability of more recent or accurate data or more sophisticated water quality monitoring, flaws in the original analysis, or changes in conditions. Additionally, EPA guidance provides that once a water body/pollutant combination has an approved TMDL, that water body/pollutant combination can be placed in the Integrated Report Category 4A. Category 4A presents waters that are still impaired but have an approved TMDL addressing one or more pollutants causing an impairment.[13]

A comparison of the EPA approved 2016 MI 303(d) list to the list of waterbodies identified in ATTAINS as Category 5 for the 2018 MI 303(d) list shows that Michigan is delisting 4,217 listed pollutants/impairments (and that require TMDLs) from Category 5 from the 2016 approved list. This unusually large number of delistings is associated with the EPA review and approval of 3 statewide TMDLs for *E. coli*, PCBs, and mercury in the time period between EPA's approval of the State's 2016 list and its development of the 2018 list. Additionally, eight listed pollutants/impairments were moved to Category 2 (some but not all water quality standards are being met) because the State collected new data that showed WQS for the designated use are met. Finally, two listed impairments were moved to Category 3 (insufficient information) because EGLE determined that the original basis for listing was incorrect.

E. Priority Ranking and Targeting

EPA has also reviewed Michigan's priority ranking and targeting of listed waters for TMDL development, as required by 40 C.F.R. § 130.7(b)(4).

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[12] In *Pronsolino v. Nastri*, the United States Court of Appeals for the Ninth Circuit held that Section 303(d) of the CWA authorizes EPA to identify and establish TMDLs for waters impaired by nonpoint sources, 291 F.3d 1123 (9th Cir. 2002).

[13] See 2006 IR Guidance, pp. 58-59.

Prioritization and targeting of listed waters is discussed in Section 8.3.3 of the 2018 IR. A specific two-year schedule for TMDL development is not included, however, because the State does not develop short term priorities.

While federal regulations require states to prioritize and identify waters targeted for TMDL development,[14] EPA does not approve or disapprove a state's priorities.

F. Waters/Pollutant combinations Added to the 2018 Section 303(d) List

Michigan added 203 new waterbody/impairment combinations to the 2018 303(d) list.

EPA reviewed the information the state submitted for all its Category 5-listed waters, which included: (1) the public comments received and responses to comments, (2) the listing methodology, and (3) public notice information and data solicitation request, and concludes that the State's listing decisions are reasonable.

G. Waters included on the 2018 Section 303(d) list exclude those which are in Indian Country

EPA's approval of Michigan's Section 303(d) list extends to all Category 5-listed water with the exception of any waters that are within Indian Country, as defined in 18 U.S.C. Section 1151. EPA is taking no action to approve or disapprove the State's list with respect to those waters at this time. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under CWA Section 303(d) for those waters.

H. Public Participation

The process for identifying WQLS requires a public participation process. The process is intended to foster public awareness and transparent decision-making.[15] At a minimum, the public participation process must provide, encourage, and assist the participation of the public or segments of the public that may have a particular interest in a given program or decision.[16] The public notification must be provided far enough in advance of agency action to permit time for public response which in general should not be less than 30 days.[17]

[14] See 40 CFR § 130.7(b)(4).
[15] See 40 CFR § 25.1(a).
[16] See 40 CFR § 25.3(a) and §25.4(b)(5).
[17] See 40 CFR § 25.4 (c).

The MI 2018 IR states:

> A draft version of this 2018 IR was made available on EGLE's Web site for public review and comment. This announcement was published on EGLE's calendar between June 28, 2019 and July 29, 2019. Public comments to be considered in the final submittal of the 2018 IR were due July 29, 2019. Seven public comments and one comment from the USEPA were received pertaining to the Draft 2018 IR. EGLE recognizes the importance of public comments and thanks individuals and organizations that provide input, express water quality concerns, or pose questions. Following is a summary of received comments and response. Public and USEPA comments to the Draft Integrated Report are included in their entirety in Appendix E.

Michigan received 9 comments during the development of the 2018 IR. A brief summary of the comments received and the States responses are presented in Section 9.4 of the IR. Based on the State's responses to the comments received, EPA understands that any data not considered during the development of the 2018 303(d) list due to timeliness of the submission will be reviewed for possible inclusion during the 2020 assessment cycle, including data regarding the potential listing of Flower Creek. EPA also understands that EGLE's development of a methodology for assessing impairments due to PFAS chemicals will be a priority for the 2020 listing cycle. EPA notes that EGLE aims to assess potential impairment for PFAS and PFOA based on data collected in 2017-18 and that were not included in the State's 2018 assessment. Additionally, EPA recognizes EGLE's ongoing work to assess public water supply uses in relation to the impairment for nutrients of Lake Erie. Finally, EPA appreciates and acknowledges EGLE's response to those comments raised by EPA and looks forward to continuing to work with EGLE as they refine existing and develop new assessment methodologies to meet current challenges.

EPA reviewed the public participation information submitted by the State and concludes that the EGLE adequately addressed the public comments it received regarding the 2018 303(d) list. EPA also reviewed information made available by EGLE to the public for review and comment, and EGLE's announcement of the public comment period. EPA finds that the State's public participation process for the 2018 3030(d) list provided the public with a reasonable opportunity to review and provide comments.

I. Tribal Consultation

Pursuant to Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* and with the *EPA Policy on Consultation and Coordination with Indian Tribes (May 2011).* On November 26, 2019, EPA sent a tribal consultation invitation letter to federally recognized tribes offering the opportunity to consult with EPA on its review of the final MI 2016 303(d) list of impaired waters. In this letter, EPA explained its policy to consult on a government-to-government basis with federally recognized tribal governments when EPA actions and decisions may affect tribal interests. A courtesy email was also sent to all 35 tribal Environmental Program Directors on November 26, 2019 notifying them that the invitation letters had been sent to their respective Tribal Leaders.

A notice of the tribal consultation opportunity was posted online through the EPA Tribal Consultation Opportunities Tracking System (TCOTS)[18]. TCOTS publicizes upcoming and current EPA consultation opportunities for tribal governments. The goal of TCOTS is to provide early notification and transparency on EPA consultations with tribal governments. TCOTS allows users to download, view and sort information, and to submit comments on a tribal consultation.

EPA established a deadline of December 6th, 2019 for tribes to accept the invitation for a consultation conference call. EPA did not receive a notice from any of the Region 5 tribes indicating they wished to consult, and no written comments were received by EPA by the December 10th deadline.

Attachments

1. Appendix 1: State of Michigan 2018 303(d) list of waterbody impairments requiring TMDLs. (Identified as Category 5 EPA_PARAM_IR_CATEGORY_ID in the ATTAINS database on November 25th, 2019)

[18] https://tcots.epa.gov/apex/tcotspub/f?p=106:1:2486201894919